

Front-load Sink/Laundry Combo.

Abstract

An automatic front-loading washing machine with drying capability including a cabinet, a drum, a heater with a blower and air conduit, a condensation device and a sink with connection means for water and waste line, which all are assembled in one integrated unit. It looks like a vanity with a built-in laundry machine and could be installed in any bathroom having standard provision for sink connection. It could also replace any existing standard sink giving customer a laundry capability.

Current U.S. Class:

68/3R; 68/17R; 68/20; 68/23.1;
68/24; 68/173.

International Class:

D06F 025/00; D06F 37/20.

Field of search:

68/17R, 20, 23.1, 24, 26, 140, 146, 173, 207;
188/129; 210/363, 364.

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Claims:

- 1. A front-loading sink/laundry combo, comprising:
a cabinet;
a front-loading automatic washing machine having a drum, which is suspended inside of the said cabinet;
a motor connected to the said drum;
washing process control and programming means;
connection means for water supply and a waste line;
an access door;
a sink with a faucet mounted on the top of the cabinet and connected to the same water supply and a waste line;
vibration-absorbing wall anchoring means.**
- 2. The front-loading sink/laundry combo defined in claim 1 wherein said washing machine is fitted for drying, another words it is washer/dryer combo.**
- 3. The front-loading sink/laundry combo defined in claim 1 wherein said front-loading automatic washing machine is removable attached to the cabinet under the sink.**
- 4. The front-loading sink/laundry combo defined in claim 1 wherein said front-loading automatic washing machine is pivotally attached to the cabinet under the sink.**
- 5. The front-loading sink/laundry combo defined in claim 1 wherein said front-loading automatic washing machine is pivotally attached to the cabinet under the sink having two way motion control and position-securing device.**
- 6. The front-loading sink/laundry combo defined in claim 2 wherein said front-loading automatic washing machine is removable attached to the cabinet under the sink.**
- 7. The front-loading sink/laundry combo defined in claim 2 wherein said front-loading automatic washing machine is pivotally attached to the cabinet under the sink.**
- 8. The front-loading sink/laundry combo defined in claim 2 wherein said front-loading automatic washing machine is pivotally attached to the cabinet under the sink having two way motion control and position-securing device (bar).**
- 9. The front-loading sink/laundry combo defined in claim 1 wherein P-trap is mounted flush to the wall and configured on a way that the water accumulated in its lower expanded tank-like part is used for lowering vibration of the cabinet;**
- 10. The front-loading sink/laundry combo defined in claim 2 wherein P-trap is mounted flush to the wall and configured on a way that the water accumulated in its lower expanded tank-like part is used for lowering vibration of the cabinet;**

11. The front-loading sink/laundry combo defined in claim 2 wherein said dryer has a condensation device.
12. The front-loading sink/laundry combo defined in claim 2 wherein said dryer has a ventilation means, which are direct connected to the waste line bypassing P-trap.
13. The front-loading sink/laundry combo defined in claim 2 wherein said dryer has a check valve, which prevents sewer smell from entering laundry.
14. The front-loading sink/laundry combo defined in claim 2 wherein said dryer equipped with retractable ventilation hose.
15. The front-loading sink/laundry combo defined in claim 2 wherein said dryer equipped with water-filled lint trap and P-trap combo.
16. A front-loading sink/laundry combo, comprising:
 - a cabinet;
 - a front-loading automatic washing machine having a drum, which is suspended inside of the said cabinet, a motor connected to the said drum, washing process control and programming means, connection means for water supply and a waste line;
 - an access door;
 - a pitched sink with a faucet mounted on the top of the cabinet and connected to the same water supply and a waste line and the rotation axle of the drum is oriented in accordance with that pitch;
 - vibration-absorbing wall anchoring means.
17. The front-loading sink/laundry combo defined in claim 16 wherein said washing machine is fitted for drying, another words it is washer/dryer combo.
18. The front-loading sink/laundry combo defined in claim 16 wherein said front-loading automatic washing machine is removably attached to the cabinet under the sink.
19. The front-loading sink/laundry combo defined in claim 16 wherein said front-loading automatic washing machine is pivotally attached to the cabinet under the sink.
20. The front-loading sink/laundry combo defined in claim 17 wherein said front-loading automatic washing machine is removably attached to the cabinet under the sink.
21. The front-loading sink/laundry combo defined in claim 17 wherein said front-loading automatic washing machine is pivotally attached to the cabinet under the sink.
22. The front-loading sink/laundry combo defined in claim 16 wherein P-trap is mounted flush to the wall and configured on a way that the water accumulated in its lower expanded tank-like part is used for lowering vibration of the cabinet;
23. The front-loading sink/laundry combo defined in claim 17 wherein P-trap is mounted flush to the wall and configured on a way that the water accumulated in its lower expanded tank-like part is used for lowering vibration of the cabinet;

24. The front-loading sink/laundry combo defined in claim 17 wherein said dryer has a condensation device.
25. The front-loading sink/laundry combo defined in claim 17 wherein said dryer has a ventilation means, which are direct connected to the waste line bypassing P-trap.
26. The front-loading sink/laundry combo defined in claim 17 wherein said dryer has a check valve, which prevents sewer smell from entering laundry.
27. The front-loading sink/laundry combo defined in claim 17 wherein said dryer equipped with retractable ventilation hose.
28. The front-loading sink/laundry combo defined in claim 17 wherein said dryer equipped with water-filled lint trap and P-trap combo.
29. The front-loading sink/laundry combo defined in claim 16 wherein said front-loading automatic washing machine is pivotally attached to the cabinet under the sink having two way motion control and position-securing device.
30. The front-loading sink/laundry combo defined in claim 17 wherein said front-loading automatic washing machine is pivotally attached to the cabinet under the sink having two way motion control and position-securing device.
31. Method for installation of dryer or washer/dryer combo machine in a room having standard provision for sink connection and no provision for ventilation comprising the following steps:
 - a partial re-routing of a high humidity hot air from re-circulation circuit of the dryer;
 - removing said hot air out of operational area;
 - directing said hot air toward water waste line;
 - guiding of said hot air to the waste line via check-valve bypassing P-trap;
 - releasing of said hot air to waste line ventilation pipes over the adjacent part of a waste line;
 - preventing waste line air from return back to washer/dryer combo by check-valve;
 - accumulating waste water in re-configured P-trap for lowering vibration of the cabinet.

Description

Background of invention

The vast majority of building apartments have no space and no provision for stationary washers or washer/dryer combo. So the laundry in such apartments is a problem. Portable washer is a kind of solution, but it is always on your way when used and it always takes your valuable storage space when unused.

Brief description of the prior arts.

Washer/dryer combo, with condensation device similar to *Automatic washing machine fitted for drying* and described in a patent # 5,588,313 do not requires ventilation, but is too heavy and bulky to be a convenient portable appliance. Well known are also built-in appliances like *Compact top-loading dishwasher suitable for fitting inside furniture units* described in a patent # 4,739,781. This design requires separate kitchen cabinet.

It would be nice to have “Zero-space” stationary washer or washer/dryer combination, which could be located in a bathroom and does not require any additional provision for installation.

Summary of the Invention

The invention relates to the field of automatic front-loading washing machines and combo units.

The front-loading sink/laundry combo consists of an automatic washing machine with or without drying capacity and the sink with a faucet, which is mounted on the top of the cabinet. All this is assembled in one integrated unit (concealed laundry). This combination utilizing the space under the sink for laundry machine by re-shaping both P-trap and the sink and provide the user with “Zero-space” stationary washer or washer/dryer combo. It is connected to water supply by flexible hoses and to waste line via modified flexible P-trap.

It resembles a vanity with built-in laundry machine under the sink. It supposes to replace any standard sink giving customer additional convenience of laundry.

An additional advantage of this invention is in increased speed of the drying because a part of hot and humid air from a dryer is directed to the waste water line by-passing the P-trap and utilizing waste line’s ventilation pipes.

The check valve prevents bad waste line smell from returning back to dryer.

Brief description of the drawings.

Fig. 1 is an illustrative view of sink and washer combination.

Fig. 2 is an illustration of connections to a waste line.

Description of the preferred embodiment.

The front-loading sink/laundry combo consists of an automatic washing machine having a drum 1 and the sink 2 with a faucet 3, which is mounted on the top of the cabinet 4. All this is assembled in one integrated unit.

The unit is connected to water supply by flexible hoses (hook-ups) like typical sink and to waste line 7 by drainpipe 14 via modified flexible P-trap 5. P-trap 5 is located under the sink 2 flush to the wall 6.

The unit could be equipped with a heater, blower and vent and operate like washer-dryer combo.

In a process of drying all hot and humid air could be directed outside via retractable ventilation hose.

When outside ventilation is not available a condensation device could be used. In order to increase the speed of the drying process with condensation device at least part of the hot and humid air is directed via ventilation hose 9 and coupling 10 to the waste line's ventilation pipe 8 bypassing the P-trap 5.

The check valve 11 prevents bad waste line smell from returning back to dryer.

In order to make unit more compact the sink and the axle of the drum are pitched on the same way.

In preferred embodiment the drum 1 is permanently suspended inside of the cabinet 4. However, it could be mounted pivotally or removable. This gives customer convenience of better access for loading/unloading operations by removing the laundry (drum section) out of the sink by sliding out of the cabinet or rotation around vertical or horizontal axle.

In order to minimize the force required for relocation of the drum while assuring the safety of operations different types of motion control and position-securing devices could be used.

Flexible P-trap 5 is positioned flush to the wall 6, which assures connection during vibration and gives more space for a drum.

In order to decrease vibration of the cabinet the lower part of a P-trap made with tank-like expansion 13, which accumulates a few gallons of running wastewater. This tank 13, which is attached to the cabinet, increases its weight and stability. In addition the cabinet is connected to the wall with vibration-absorbing anchors.